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Anthrax

Overview ^(1,2)

Anthrax is a potential bioterrorism weapon. The key identifying sign for anthrax is a widened mediastinum (present in about 80% of patients). A widened mediastinum, if present, will be visible on x-ray 2-3 days after onset of symptoms. If you suspect that you are dealing with a bioterrorism situation, contact your [Senior Epidemiology Specialist for the region](#), or the Department of Health and Senior Service's Situation Room (DSR) at 800-392-0272.

For a complete description of anthrax, refer to the following texts:

- [Control of Communicable Diseases Manual](#) (CCDM).
- [Red Book](#), Report of the Committee on Infectious Diseases.

Case Definition ⁽³⁾

Clinical description

An illness with acute onset characterized by several distinct clinical forms, including the following:

- Cutaneous: a skin lesion evolving during a period of 2–6 days from a papule, through a vesicular stage, to a depressed black eschar.
- Inhalation: a brief prodrome resembling a viral respiratory illness, followed by development of hypoxia and dyspnea, with radiographic evidence of mediastinal widening.
- Intestinal: severe abdominal distress followed by fever and signs of septicemia.
- Oropharyngeal: mucosal lesion in the oral cavity or oropharynx, cervical adenopathy and edema, and fever.


Laboratory criteria for diagnosis

- Isolation of *Bacillus anthracis* from a clinical specimen, or
- Anthrax electrophoretic immunotransblot (EITB) reaction to the protective antigen and/or lethal factor bands in one or more serum samples obtained after onset of symptoms, or
- Demonstration of *B. anthracis* in a clinical specimen by immunofluorescence.

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed.

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case.⁽⁴⁾

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Information Needed for Investigation

Verify the diagnosis. What laboratory tests were conducted? What were the results? What are the patient's clinical symptoms?

Establish the extent of illness. Determine if household or other close contacts are, or have been, ill by contacting the health care provider, patient or family members.

Case/Contact Follow-Up And Control Measures

If terrorist activity is suspected:

- Contact appropriate law enforcement authorities.
- Contact the Regional Communicable Disease Coordinator.
- Complete the "Suspicious Substance Data Collection Questionnaire" for an incident with a known source of exposure (e.g., white powder in an envelope). This form is included in this Section.
- Complete the "Missouri Department of Health and Senior Services, Suspect Anthrax Case Investigation Form" for an incident with an unknown source of exposure (e.g., people coming into an emergency room with symptoms consistent with anthrax exposure). This form is included in this Section.

General follow-up:

- Determine the source of infection to prevent other cases:
 - Does the case work with animals, especially sheep, cattle, goats, or their products?
 - Has the case been exposed to recent excavation sites or to places where animal products are handled?
 - Has the case traveled out of the country, especially to places where anthrax is currently known to be occurring? Contact your Regional Communicable Disease Coordinator for a list of countries.
 - Does the case or his/her close associates know of any other similar cases?


NOTE: If the case has no remarkable travel history and is not employed in an occupation that is prone to exposure, a bioterrorism event ***must*** be considered. Determine **all** activities of the case within the previous six days, particularly attendance at events with large numbers of people. Notify the Regional Communicable Disease Coordinator.

Control Measures

See the Control of Communicable Diseases Manual, Anthrax, "Methods of control."

See the Red Book, Anthrax, "Control Measures."

Naturally occurring anthrax stems from animal origins. Although this disease is rarely transmitted person-to-person, body substance precautions for the duration of illness are

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indicated for cases. Identification and control of contaminated exposure sites is paramount.

Laboratory Procedures

The State Public Health Laboratory (SPHL) currently conducts the following tests for *Bacillus anthracis*:

Testing available/ estimated turnaround times:

- **Presumptive results:**
 - Real-time PCR (polymerase chain reaction): 4 hours
 - TRF (time-resolved fluorescence): 4 hours
- **Confirming test:**
 - Culture: Turn-around time on culturing specimens is 24-hours minimum for a “presumptive,” complete identification and positive confirmation would depend on how quickly the organisms grew and other variables. Usually, identification is complete in 48 hours, but it can take up to three to four days.

Additional information on laboratory procedures can be obtained from the Regional Communicable Disease Coordinator or from staff at the SPHL. The SPHL web site is: <http://www.dhss.state.mo.us/Lab/index.htm>. (23 May 2003)

Reporting Requirements

Anthrax is a Category IB disease and shall be reported to the local health authority or to the Missouri Department of Health and Senior Services within 24 hours of first knowledge or suspicion by telephone, facsimile or other rapid communication.


1. For confirmed and probable cases, complete a “Disease Case Report” (CD-1).
2. For confirmed and probable cases, complete a “Record of Investigation of Communicable Disease” (CD-2) for non-bioterrorism exposures only.
3. Entry of the completed CD-1 into MOHSIS negates the need for the paper CD-1 to be forwarded to the Regional Health Office.
4. Send the completed secondary investigation form to the Regional Health Office.
5. All outbreaks or “suspected” outbreaks must be reported as soon as possible (by phone, fax, or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).
6. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator.

DHSS Health Alerts and Related Information

DHSS Health Alerts are located at:

http://www.dhss.state.mo.us/BT_Response/HealthAlert_Archive.htm (23 May 2003)

Health Alerts that specifically address anthrax are: 3, 11-15, 17, 24, 26, 27, 31, 32, 44.

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2. American Academy of Pediatrics. "Anthrax." In: Peter, G, ed. 2000 Red Book: Report of the Committee on Infectious Diseases. 25th ed. Elk Grove Village, IL. 1997: 168-170.
3. Centers for Disease Control and Prevention. Case Definitions for Infectious Conditions Under Public Health Surveillance. MMWR 1997; 46 (No.RR-10). "Anthrax (*Bacillus anthracis*)," 1996, http://www.cdc.gov/epo/dphsi/casedef/antrax_current_1.htm (23 May 2003)
4. Missouri Department of Health and Senior Services - Section for Communicable Disease Prevention, surveillance case definition.
5. U.S. Army Medical Research Institute of Infectious Diseases. Medical Management of Biologic Casualties Handbook. 3rd ed. July, 1998.

Other Sources of Information

1. Lew, Daniel. "*Bacillus Anthracis* (Anthrax)." Principles and Practice of Infectious Diseases, 4th ed. Eds. Gerald L. Mandell, John E. Bennett, & Raphael Dolin. New York: Churchill Livingstone, 1995: 1885-1889.
2. Brachman, Philip S. and Arnold F. Kaufmann. "Anthrax." Bacterial Infections of Humans Epidemiology and Control, 3rd ed. Eds. Alfred S. Evans and Philip S. Brachman. New York: Plenum, 1998: 95-107.
3. The Merck Veterinary Manual. 8th Ed. Ed. Susan E. Aiello. Whitehouse Station, NJ: Merck & Co., Inc., 1998: 432, 2162. <http://www.merckvetmanual.com/mvm/index.jsp> (search "anthrax"). (23 May 2003)

Web Resources and Information

1. Missouri Department of Health & Senior Services, Emergency / Terrorism Response, Information for Medical and Public Health Professionals, Selected References, "Anthrax" http://www.dhss.state.mo.us/BT_Response/MedicalProfessionals.htm#_Anthrax (7/03)
2. World Health Organization Emerging and other Communicable Diseases Surveillance and Control, "Guidelines for the Surveillance and Control of Anthrax in Humans and Animals" http://www.who.int/emc-documents/zoonoses/docs/whoemczdi986_nofigs.html (5/03)
3. Kenneth Todur University of Wisconsin Department of Bacteriology, "Bacteriology 330 Lecture Topics: Anthrax." <http://www.bact.wisc.edu/Bact330/lectureanthrax> (5/03)
4. Department of Defense, Anthrax Vaccine Immunization Program. <http://www.anthrax.osd.mil> (5/03)

Anthrax

Fact Sheet

What is anthrax?

Anthrax is an acute infectious disease caused by the spore-forming bacterium *Bacillus anthracis*. Anthrax most commonly occurs in warm-blooded animals, but can also infect humans.

How common is anthrax and who can get it?

Although anthrax can be found globally, it is more often a risk in countries with less standardized and effective public health programs. Anthrax is most common in agricultural regions where it occurs in animals. Naturally occurring cases of human anthrax have not been reported in Missouri within the past fifteen years.

When anthrax affects humans, it is usually due to an occupational exposure to infected animals or their products. Workers who are exposed to dead animals and animal products (industrial anthrax) from other countries where anthrax is more common may become infected with *B. anthracis*. Anthrax in animals rarely occurs in the United States. Most reports of animal infection are received from Texas, Louisiana, Mississippi, Oklahoma, and South Dakota.

How is anthrax transmitted?

Anthrax infection can occur in three forms; cutaneous (skin), inhalation, and gastrointestinal. *B. anthracis* spores can live in the soil for many years and humans can become infected with anthrax by handling products from infected animals or by inhaling anthrax spores from contaminated animal products. Anthrax can also be spread by eating undercooked meat from infected animals. It is rare to find infected animals in the United States.

What are the symptoms of anthrax?

Symptoms of disease vary depending on how the disease was contracted, but symptoms usually occur within seven days.

- **Cutaneous** : Most anthrax infections occur when the bacterium enters a cut or abrasion on the skin, such as when handling contaminated wool, hides, leather or hair products (especially goat hair) of infected animals. Skin infection begins as a raised itchy bump that resembles an insect bite, but within 1-2 days develops into a vesicle and then a painless ulcer, usually 1-3 cm in diameter, with a characteristic black necrotic (dying) area in the center. Lymph glands in the adjacent area may swell. About 20% of untreated cases of cutaneous anthrax will result in death. Deaths are rare with appropriate antimicrobial therapy.
- **Inhalation**: Initial symptoms may resemble a common cold. After several days, the symptoms may progress to severe breathing problems and shock. Inhalation anthrax usually results in death in 1-2 days after onset of the acute symptoms.
- **Intestinal**: The intestinal disease form of anthrax may follow the consumption of contaminated meat and is characterized by inflammation of the intestinal tract. Initial signs of nausea, loss of appetite, vomiting, and fever are followed by abdominal pain, vomiting of blood, and severe diarrhea. Intestinal anthrax results in death in 25% to 60% of cases.

Can anthrax be spread from person-to-person?

Naturally occurring anthrax stems from animal origins. This disease is rarely transmitted person-to-person.

How is anthrax diagnosed?

Anthrax is diagnosed by isolating *B. anthracis* from the blood, skin lesions, or respiratory secretions or by measuring specific antibodies in the blood of suspected cases.

Is there an anthrax vaccine for humans?

The anthrax vaccine for humans licensed for use in the United States is a cell-free filtrate vaccine, which means it uses dead bacteria as opposed to live bacteria. The vaccine is reported to be 93% effective in protecting against cutaneous anthrax. The anthrax vaccine was developed and is manufactured and distributed by the Michigan Biologic Products Institute, Lansing, Michigan. Anthrax vaccines intended for use in animals should not be used in humans. For further information see

<http://www.anthrax.osd.mil> (23 May 2003)

Who should be vaccinated against anthrax?

Because anthrax is considered to be a potential agent for use in biological warfare, the Department of Defense recently announced that it will begin systematic vaccination of all U.S. military personnel. Among civilians, the Advisory Committee for Immunization Practices (ACIP) recommends anthrax vaccine be given to individuals who come in contact in the workplace with imported animal hides, furs, bone meal, wool, animal hair (especially goat hair), and bristles; and for individuals engaged in diagnostic or investigational activities which may bring them into contact with anthrax spores. The vaccine should only be administered to healthy people from 18 to 65 years of age since investigations to date have been conducted exclusively in that population. Because it is not known whether anthrax vaccine can cause fetal harm, pregnant women should not be vaccinated.

What is the protocol for anthrax vaccination?

The immunization consists of three subcutaneous injections given two weeks apart followed by three additional subcutaneous injections given at 6, 12, and 18 months. Annual booster injections of the vaccine are required to maintain immunity.

Are there adverse reactions to the anthrax vaccine?

Mild local reactions occur in 30% of recipients and consist of slight tenderness and redness at the injection site. A moderate local reaction can occur if the vaccine is given to anyone with a past history of anthrax infection. Severe local reactions are very infrequent and consist of extensive swelling of the forearm in addition to the local reaction. Systemic reactions occur in less than 0.2% of recipients and are characterized by flu-like symptoms.

**Missouri Department of Health and Senior Services
Section for Communicable Disease Prevention
Phone: (866) 628-9891 or (573) 751-6113**

Possible Anthrax Bioterrorism Incident

Fact Sheet for Potentially Exposed Persons

What is a possible bioterrorism incident?

A bioterrorism incident is an event where an infectious agent has been used to threaten harm to one or more individuals. For example, this may occur when a person receives a letter labeled with the name of a possible bioterrorist agent (e.g., anthrax) or a telephone caller threatens to use such an agent as a weapon. Use or threatened use of any biologic agent as a weapon is a federal crime and will be thoroughly investigated and prosecuted by the police department and the FBI.

How likely is it that I have actually been exposed to a bioterrorism agent?

The vast majority of incidents nationwide have turned out to be hoaxes. However, the Missouri Department of Health and Senior Services (DHSS) will help ensure that all necessary steps are taken to evaluate the incident and protect your safety.

What will be done to evaluate an incident?

Your local departments of emergency management, police, fire, emergency medical services, and health will work together with DHSS, the Centers for Disease Control and Prevention, and the FBI to evaluate the incident and determine whether you have been exposed to a real biologic agent which could cause disease. Evaluation of the incident will include examining the circumstances of the incident, the suspect material, and the type of exposure that you may have received.

When will I know if I have been exposed to a hazardous biologic agent?

Because different organisms and toxins may be used as bioterrorist agents, the suspect material must be collected for laboratory testing. These tests will be able to identify the presence of hazardous biologic agents or toxins in approximately 24-48 hours. The results will be discussed with all exposed persons as soon as they are available.

Do I need to decontaminate myself, or throw away my clothes and belongings?

Emergency response personnel should instruct you to wash your hands and any other part of your body that contacted the suspect material with soap and water. Specific recommendations regarding decontamination of clothes and personal effects will vary according to the situation. In some cases, a dilute solution of bleach will be recommended for use in decontaminating your clothing and/or body. Unless specifically instructed to do so, you do not need to perform other decontamination procedures or discard your belongings. Emergency response personnel will perform decontamination, if necessary, of the environment in which the suspect material was found.

Do I need any treatment now, such as antibiotics or vaccines?

Should the circumstances of the incident indicate a high probability of exposure, or if laboratory tests on the suspect material indicate that you have been exposed to a biologic agent, there are medications you can take to help prevent illness.

Am I a risk to my family? Can I spread anything?

Most of the diseases caused by bioterrorist agents (e.g., anthrax) are not contagious from person to person. Even in the unlikely event that you have been exposed to a contagious agent of bioterrorism, you would have to become ill yourself to be able to spread infection. Results of the laboratory tests on the suspect material should be available in time for you to take antibiotics to prevent you from spreading anything to your family.

What should I do if I am involved in a real or potential bioterrorist event?

You should cooperate fully with emergency response personnel, providing complete information before you leave the site of the incident so you can be contacted with the results of the investigation. After emergency response personnel authorize you to leave, you may continue your usual activities at work or home. It is not necessary for you to visit a hospital or doctor's office unless directed to do so by emergency response staff. Of course, you may contact your personal physician to discuss the possible exposure if you wish.

What should I do if I develop any symptoms before the results of laboratory tests are ready?

If you should develop any symptoms or a fever greater than 100 degrees F, immediately contact your doctor; you and/or your doctor should also contact your local public health agency. Recommendations will then be given to you and your health care provider on how to best evaluate and treat your symptoms, based on the circumstances of this possible exposure incident.

When will it be safe for me to return to the exposure site?

Investigators of the incident will notify the authorities when it is safe to return to the site. If this is a place of work, your supervisor will then contact you when it is safe to return.

Who can my doctor or I contact if we have questions?

If you or your physician have medical questions about your possible exposure, contact your local public health agency or DHSS.

Animal Anthrax

Fact Sheet

Anthrax as a Bioterrorist Agent: How animals may be affected

What is anthrax?

Anthrax is a serious infectious disease caused by spore-forming bacteria called *Bacillus anthracis* and occurs naturally in animals in the southern and southwestern parts of Texas. Many different types of animals, as well as people, can get the disease and could, therefore, be affected in a terrorist attack.

How can an animal get anthrax?

Deer and livestock normally get the disease by swallowing anthrax spores while grazing on contaminated pasture. In the case of terrorism, large numbers of anthrax spores may be released into the air. Animals and people at the site of the anthrax release may become infected by breathing the spores, which are odorless, colorless, and tasteless.

What are the signs of anthrax disease in animals?

Signs of the illness usually appear 3-7 days after the spores are inhaled or swallowed but may occur sooner if a large number of spores are inhaled. Once symptoms begin, victims usually die within two days. Seriously affected animals may stagger, have difficulty breathing, tremble, and finally collapse and die within a few hours. Animals with less serious cases may have a rise in temperature, a period of excitement followed by staggering, depression, unconsciousness, difficulty breathing, convulsions, and death. Symptoms in pigs, dogs, and cats may be less severe than in deer and livestock.

How is anthrax diagnosed?

Symptoms may make a veterinarian suspicious of anthrax, but the disease can often be confused with other illnesses. A positive diagnosis is made by a laboratory finding the anthrax bacteria or antibodies to anthrax in the blood of affected animals.

How is anthrax treated?

It is usually hopeless to treat animals that are sick. Occasionally, if the disease is diagnosed soon after infection, antibiotics, along with adequate nursing care, may help. The indiscriminate use of antibiotics in an animal without an infection may result in other serious complications.

Is an anthrax vaccine available?

A vaccine for livestock is commonly used in areas that have anthrax, but the vaccine must be used before the animal is exposed to the bacteria. The vaccine for livestock is not the same as the one for humans. No vaccine is available for pets.

Can infected animals spread anthrax?

Handling or eating a dead or sick animal infected with anthrax can transmit anthrax to humans and other animals.

What should be done with animals that die of anthrax?

Because animals that die of anthrax can contaminate the soil with anthrax spores, the bodies should be burned, not buried. In the case of bioterrorism, disposal methods will be determined by the government agency in charge of the disaster response.

How do I protect my animals and myself in case of attack?

Only those people and animals near the attack site will be in danger of infection. Cleaning hair, skin, clothing, and animals with soap and water will help eliminate contamination.

**Missouri Department of Health and Senior Services
Section of Communicable Disease Prevention
Phone (573) 751-6113 or (866) 628-9891**

Suspicious Substance Data Collection Questionnaire

Please Print

This information will be kept confidential

Today's Date: ____/____/____

Medical Record Number: _____

First Name _____ Middle Initial _____ Last Name _____

Gender (M/F) _____ Date of Birth ____/____/____ Age _____

Event Date: ____/____/____ Event Location _____

Where were you when the event occurred? _____

(For instance, Room Number, Parking Area 2 Red, NW corner of 3rd floor, etc. Please be specific)

Did you enter the immediate area after the event occurred? (<6.5 ft from where event occurred) **YES NO** (circle one)

Description of Situation: _____

Home Address _____ Apt or Lot # _____

Home City _____ Zipcode _____

Home County _____ Home State _____

Work (Business) Name _____ Work Address _____

Work City _____ Work State _____

Occupation: _____

Please list phone numbers including area code (### / ### - ####)

Home Phone _____ Work Phone _____

Pager _____ Cell Phone _____

Alternate or Emergency contacts: [person(s) who will always know how to contact you on short notice]

Contact 1 _____ Contact 1 Phone _____

Contact 2 _____ Contact 2 Phone _____

Have you had significant illnesses since the event causing you to seek medical care? **YES NO** If yes, when? ____/____/____

Details / to include lab tests performed: _____

_____ Treatment given: _____

Antibiotic given? **YES NO UNKNOWN** If yes, name: _____ Start date ____/____/____ Stop date ____/____/____

Current clinical status as reported by patient: (circle one) **IMPROVED NO CHANGE WORSENER BACK TO NORMAL**

Physician's Name _____ Physician's Phone _____

Are you ill now, or have you had any of the following symptoms or ailments since the event? **YES NO** (circle one).

Check all symptoms that apply.

Symptoms	Yes	Symptoms	Yes	Symptoms	Yes
Fever		Itchy skin		Vomiting blood	
Upset stomach (nausea)		Trouble swallowing		Black scab on skin	
Headache		Skin lesions		Sore throat	
Dry cough		Trouble breathing		Neck pain	
Sore muscles		Sweating excessively		Other (list):	
Bloody diarrhea		Pain or tightness in the chest			
Stomach pain		Extreme tiredness			

Have you ever been vaccinated for anthrax? **YES NO** If yes, when? ____/____/____

Details: _____

Are you allergic to any medicine(s)? **YES NO UNKNOWN** If yes, what medicines(s) are you allergic to? _____

Did or will person receive prophylaxis as result of exposure? **YES NO UNKNOWN** If yes, drug: _____

Start date ____/____/____ Stop date ____/____/____

Please list any other information that (you or investigator) think might be important or relevant to this investigation:

Thank you for your information. This information will be used to contact you with important health information, if necessary. *Your personal information will be kept confidential.* [19 CSR 20-20.020 (8)]

Do you have any questions?

If you develop a flu-like illness or new skin lesions in the next 60 days, please contact **your doctor immediately**. Please call the Missouri Department of Health & Senior Services at 800-392-0272 or your local public health agency to report your illness.

Medical Evaluation if done

Test	Date	Results	Test	Date	Results
WBC			Skin biopsy or wound culture		
Differential count			Chest x-ray		
Platelets			CT Scan		
Immunofluorescence Ab Immunohistochemical Ab		IFA _____ IHCA _____	CSF culture / gram stain		
Blood culture / Gram stain			Nasal swab (not recommended for diagnostic purposes)		
Blood PCR			Other:		

Current diagnosis or primary syndrome: **O** Mediastinitis or mediastinal lymphadenitis **O** Meningitis **O** Fever with respiratory disease
O Fever with hemorrhagic enteritis **O** Cutaneous lesion: _____ **O** Other: _____

Antibiotic(s) given? **YES NO UNKNOWN** If yes, antibiotic: _____ Start date ____/____/____ Stop date ____/____/____

Other treatment: _____

Current clinical status of patient: (circle one) **IMPROVED NO CHANGE WORSENER BACK TO NORMAL**

Please list any other information that might be important or relevant to this investigation: _____

DHSS Use Only

Event ID _____ Form Completed by _____ Entry Date ____/____/____

Status of Report: Pending Closed (circle one) Event location, County _____ City _____ District _____

Follow-up:

Did the patient need follow-up regarding pending environmental testing or pending clinical specimens? **YES NO UNKNOWN**.
If yes, was the individual contacted? **YES NO**. The individual was told the following: _____

The person was told to **BEGIN** or **CONTINUE** or **DISCONTINUE** or antibiotics are **NOT NECESSARY**, or the question is **N/A**.

Person initiating follow-up: _____ Date: ____/____/____

To be separated from questionnaire and given to person being interviewed.

What are the symptoms of anthrax?

Symptoms of disease vary depending on how the disease was contracted, but symptoms usually occur within seven days.

- **Cutaneous:** Most anthrax infections occur when the bacterium enters a cut or abrasion on the skin. Skin infection begins as a raised itchy bump that resembles an insect bite, but within 1-2 days develops into a vesicle and then a painless ulcer, usually 1-3 cm in diameter, with a characteristic black necrotic (dying) area in the center. Lymph glands in the adjacent area may swell.
- **Inhalation:** Initial symptoms may resemble a common cold. After several days, the symptoms may progress to severe breathing problems and shock.
- **Intestinal:** The intestinal form of anthrax may follow the consumption of contaminated food and is characterized by an inflammation of the intestinal tract. Initial signs of nausea, loss of appetite, vomiting, and fever are followed by abdominal pain, vomiting of blood, and severe diarrhea.

Common symptoms associated with Anthrax.

Fever	Sore throat	Upset stomach (nausea)	Sweating excessively
Headache	Dry cough	Stomach pain	
Extreme tiredness	Trouble swallowing	Vomiting blood	Itchy skin
Sore muscles	Trouble breathing	Bloody diarrhea	Black scab on skin
Neck pain	Pain or tightness in the chest		Skin lesions

How is anthrax diagnosed?

Anthrax is diagnosed by isolating *B. anthracis* from the blood, skin lesions, or respiratory secretions or by measuring specific antibodies in the blood of suspected cases.

Is there a treatment for anthrax?

Doctors can prescribe effective antibiotics for anthrax. To be effective, treatment should be initiated early.

Who should be vaccinated against anthrax?

Because anthrax is considered to be a potential agent for use in biological warfare, the Department of Defense recently announced that it would begin systematic vaccination of all U.S. military personnel. Among civilians, the Advisory Committee for Immunization Practices (ACIP), recommends anthrax vaccine be given to individuals who come in contact in the workplace with imported animal hides, furs, wool, animal hair (especially goat hair), and bristles; and for individuals engaged in diagnostic or investigational activities which may bring them into contact with anthrax spores. The vaccine should only be administered to healthy men and women from 18 to 65 years of age since investigations to date have been conducted exclusively in that population. Because it is not known whether anthrax vaccine can cause fetal harm, pregnant women should

If you develop a flu-like illness or new skin lesions in the next 60 days, please contact your doctor immediately. Please call the Missouri Department of Health & Senior Services at 800-392-0272 or your local public health agency to report your illness. Be sure to identify yourself as person associated with the following event:

**MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES
ANTHRAX CASE INVESTIGATION FORM**

Today's date: ____/____/____		ID :	
Patient's name		First _____	Last _____
Sex: ? Male ? Female	Age: _____	Race: _____	
	Date of birth: ____/____/____		
Home address:	City:	Zip:	Phone :
	County:	Cell Phone:	
Employer:	Occupation:	Work location:	
Work address:	City:	Zip:	Work Phone:
Date of Onset : __/__/__ Was a physician consulted? YES <input type="checkbox"/> NO <input type="checkbox"/> Name of Physician _____			
Date seen by Physician: __/__/__ Physician's Phone: _____ Hospitalized? YES <input type="checkbox"/> NO <input type="checkbox"/>			
Name of Hospital: _____ Hospital's Phone: _____ Date of admission: __/__/__			
Have you ever been vaccinated for anthrax? YES <input type="checkbox"/> NO <input type="checkbox"/> If yes, when? ____/____/____ Details: _____			
Related Medical history:			

Which of the following Symptoms did Individual have? (Check all that apply)

Symptoms	Yes	Symptoms	Yes	Symptoms	Yes
Fever		Stomach pain		Neck pain	
Upset stomach (nausea)		Vomiting blood		Itchy skin	
Headache		Bloody diarrhea		Black scab on skin	
Dry cough		Sweating excessively		Skin lesions	
Sore throat		Extreme tiredness		Describe lesion:	
Trouble swallowing		Pain or tightness in the chest		Other (list):	
Trouble breathing		Sore muscles			

Laboratory Tests & Results

Test	Date	Results	Test	Date	Results
WBC			Skin biopsy or wound culture		
Differential count			Chest x-ray		
Platelets			CT Scan		
Immunofluorescence Ab Immunohistochemical Ab		IFA _____ IHCA _____	CSF culture / gram stain		
Blood culture / Gram stain			Nasal swab (not recommended for diagnostic purposes)		
Blood PCR			Other:		

MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES

ANTHRAX CASE INVESTIGATION FORM

Treatment given? Y N Unknown If yes, describe:	Antibiotics given? Y N Unknown If yes, give name: _____ dose: _____ Start date ____/____/____ Stop date: ____/____/____
Current clinical status	<input type="checkbox"/> Improved <input type="checkbox"/> No change <input type="checkbox"/> Worsened <input type="checkbox"/> Back to normal
Disposition	<input type="checkbox"/> Discharged <input type="checkbox"/> Admitted to ward <input type="checkbox"/> Admitted ICU <input type="checkbox"/> Referred to Physician <input type="checkbox"/> Outpatient <input type="checkbox"/> Died If died, date of death ____/____/____
Current diagnosis or primary syndrome <input type="checkbox"/> Mediastinitis or mediastinal lymphadenitis <input type="checkbox"/> Meningitis <input type="checkbox"/> Fever with severe respiratory disease <input type="checkbox"/> Fever with hemorrhagic enteritis <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> Cutaneous lesion: _____	

POTENTIAL RISK FACTORS IN THE 15-60 DAYS PRIOR TO ONSET OF SIGNS/SYMPTOMS

YES	NO	UNK	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Occupation associated with Animals or Agriculture If yes, describe _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has person been exposed to Anthrax Vaccine or to Vaccinated Animals? If yes, explain _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Occupational or other exposure to Hides, Wool, Furs, Bone Meal or other Animal Products If yes, describe _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Contact With Animals If yes, type of contact _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Contact with Dead Animals If yes, type of contact _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Prior military service? If yes, date of release ____/____/____ Last duty location? _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Work in a Laboratory If yes, describe _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Contact with Unusual Powders, Dusts or Aerosols If yes, describe _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Eaten Undercooked Meat If yes, describe _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Received Unusual Letters or Packages (e.g. Containing Threats or Unusual Messages) If yes, describe _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has person opened mail for others? If yes, for whom? _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Was person present or nearby when an envelope was opened that contained powder? If yes, describe? _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the person visited the offices of a newspaper, magazine, TV, radio, or other media organization? If yes, describe _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does the person report recent contact with anyone who works for a newspaper, magazine, TV, radio, or other media organization? If yes, describe _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does the person report recent contact with a legislator, congressman, elected official or recently visiting their office? If yes, describe _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If postal worker: ask whether he/she delivered mail to the offices mentioned above? If yes, explain _____

**MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES
ANTHRAX CASE INVESTIGATION FORM**

YES NO UNK

☐ ☐ ☐ Any Unusual Occurrences?

If yes, describe _____

☐ ☐ ☐ Are any suspicious powders or mail available for testing?

If yes, describe _____

ACTIVITIES DURING THE PERIOD 15-60 DAYS PRIOR TO ONSET OF SIGNS & SYMPTOMS

Recent Travel Outside Home Town or City (locations and dates for each trip) _____

Work (including second jobs) _____

Sporting Events (locations and dates) _____

Religious Meetings (locations and dates) _____

Recreational Events (locations and dates) _____

Volunteer Activities (locations and dates) _____

Other Meetings/Events/Outdoor Activities (locations and dates) _____

Hobbies _____

ASSOCIATED CASES

☐ Is Patient/Family Aware of Other Persons with a Febrile, Flu-Like, and/or Respiratory Illness, or With Skin Lesion(s)?

Name(s) _____

Address(es) or Other Locating Information _____

Description of Illness(es) _____

Date(s) of Onset (if known) _____

☐ Other Associated Cases

Number _____

Describe Association With Patient _____

Comments / Follow-up:

Environmental Specimen(s), If collected

SpecimenType	Collection Date	Location	Test Performed	Results	Laboratory

Investigated by:

Agency: _____ Date: __/__/__

Phone: _____

MISSOURI DEPARTMENT OF HEALTH

RECORD OF INVESTIGATION OF COMMUNICABLE DISEASE*

Patient's Name				FOR CODING ONLY			
Address		City		State		Zip Code	
Birth / /	Sex <input type="checkbox"/> M <input type="checkbox"/> F	Race <input type="checkbox"/> W <input type="checkbox"/> N <input type="checkbox"/> Other		County of Residence			
Parent's Name If Not Adult				Phone			
Hospitalized <input type="checkbox"/> Yes <input type="checkbox"/> No		Hospital Name		Date of Onset			
Physician's Name				Phone Number			
Address				Date			
Previous Address (if significant)				Date Moved			
Place Employed or School Attended				Occupation			
Date Reported		How did you first learn of this case?				Date	

Disease _____ ☐ Confirmed or ☐ Suspected } at beginning of investigation.

Chief Clinical Symptoms with Dates: _____

Treatment (type, amount, dates): _____

DIAGNOSTIC LABORATORY TESTS ON PATIENT			
Type of Specimen	Date Collected	Result	Name of Laboratory

Are there other associated cases? _____ If yes, how many, and how associated? _____

Household Sanitation: ☐ Good ☐ Fair ☐ Poor Milk Supply _____
 Water Supply _____

(Continued on reverse side)

* Special forms should be used for investigations of Diphtheria (CD 2A), Encephalitis or Meningitis (CD 2B), Enteric Infections (CD 2C), and Foodborne Outbreaks (CD 2D).

Other Pertinent Epidemiological Data (exposure to birds and animals, insect bites, vaccination, travel, etc.): _____

CONTACTS (Household and Other)

Name and Address	Age / Sex	Relation to Patient	Similar Illness? Onset Date	Laboratory Specimen	Date Collected	Result

Narrative and Follow-up Notes: _____

Probable Source _____

☐ Recovered ☐ Died Date of Death _____ Cause of Death _____

Investigated by _____ Final Diagnosis _____

Name of Agency _____ Date _____